The Maryland Fruit Grower

Published Monthly
By
THE MARYLAND STATE HORTICULTURAL SOCIETY
College Park, Maryland

Volume 1 November, 1931 Number 10

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A. F. Vierheller, Extension Horiculturist

FRUIT VARIETIES

Some growers feel that too many fruit varieties are being grown in Maryland as well as in the Eastern United States. This year has brought the real test of the value of some varieties. There is no doubt that we would be better off with less apple and peach varieties. The New England States have selected seven varieties adapted to their conditions and markets, and each year thousands of trees are being top worked and many trees are being removed. Similar action in the Maryland fruit belt might be a splendid idea.

Several papers regarding new varieties are being published in the Maryland Fruit Grower. This does not mean that we recommend all new varieties. If fruits better than our present ones are being developed, we should know about these fruits. Many of our members sell their fruit through roadside, local, and fancy trade and these men may want to try some of these new fruits. At any rate, the papers should be of general interest. The questions of poor or unprofitable varieties, and what to plant, if to plant at all, are things that each grower must decide for himself, and must be decided only after plenty of thinking. Now is the time to start "housecleaning" if we have unprofitable trees or varieties, and that does not mean that it's necessary to replace these trees. In publishing papers regarding newer varieties, the purpose is merely to give the grower some idea of the later developments in horticulture.

ANOTHER GOOD BULLETIN

"Removing Spray Residue from Apples and Pears" is the title of Farmers' Bulletin 1687 just published by the Division of Horticultural Crops and Diseases, U. S. Department of Agriculture. It can be had by writing Superintendent of Documents, Washington, D. C.

COMING MEETINGS

Peninsula Horticultural Society meets at Salisbury, Maryland, December 9, 10 and 11, 1931. Secretary, J. F. Adams, Dover, Delaware.

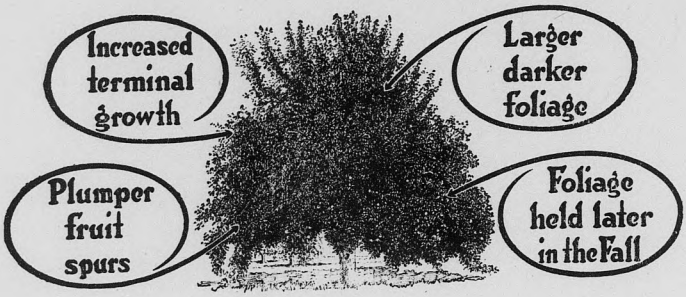
Virginia Horticultural Society meets at Winchester, Virginia, December 9 and 10, 1931. Secretary, W. S. Campfield, Staunton, Virginia.

The Eighth Annual Pennsylvania Horticulture Week will be held at State College, Pennsylvania, December 9, 10 and 11, 1931. This is not the annual meeting of the Pennsylvania Horticultural Association, but is a joint meeting for fruit and vegetable growers, nurserymen and florists. Secretary, F. N. Fagan, State College, Pennsylvania.

SPRAY TANK TREATMENT

If a spray tank needs cleaning, here's a suggestion from "Hoosier Horticulture." For a 200-gallon tank slush 2 gallons of kerosene around inside the tank, with a can, being sure to cover entire surface. Add enough water to cover the agitator, and start the engine. Add 4 or 5 pounds of sal soda or Wyandotte powder and turn one spray gun into the tank, spraying the inside thoroughly. Drain and flush with clean water.

We might add: Don't forget to drain all parts of the sprayer to prevent freezing.



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POLLINATION OF CERTAIN APPLE BUD SPORTS IN NORTH CENTRAL WASHINGTON

E. L. Overholser and F. L. Overley
State College of Washington, Pullman, Washington

In North Central Washington there are at present appreciable plantings of several red colored bud mutations of standard named commercial apple varieties. The growers are interested in knowing the pollination status of these so called red strains with respect to whether they are self-fertile or interfertile with other commercial sorts and if not what may be satisfactory pollenizers for them. It is of interest also to know how effective the mutations (new varieties) may be as pollenizers for the Delicious and Winesap, the two leading standard varieties that tend to be self-sterile.

The mutations which have been studied with respect to pollenation response include the Starking, Richared and Shotwell Delicious, all of which apparently originated from the Delicious. The Red Rome, the Blackjon (from Jonathan), King John (from Jonathan), Red Winesap, Red Stayman, are others whose names indicate the variety giving rise to the mutation were also studied. Likewise there is not sufficient information available under our conditions concerning the relatively new variety Golden Delicious.

The work herewith reported was conducted in North Central Washington during the past several seasons (1928-31 inclusive) Standard methods were employed. Only blossoms on vigorous spurs were emasculated, (pollen or male part of flower removed) and not more than three to a cluster, the remaining blossoms being pinched off. After emasculation the flowers were not covered with bags but were left exposed. The pollen from lots showing 20 to 60 per cent germination was applied within 24 hours after emasculation. The final count was made after the "June drop."

The data previous to 1930 was obtained by Mr. William Luce, formerly of the State College of Washington.

THE DELICIOUS

It is generally recognized that the Delicious is self-unfruitful, and the data (Table 1) obtained in North Central Washington demonstrates this to be the case. Varieties that seem to be satisfactory pollinizers for the Delicious are Arkansas Black, Black Ben, Blackjon, Grimes, Jonathan, King John, King David, McIntosh, Red Rome, Rome, Esopus (Spitzenburg) Winter Banana, and Yellow Newtown. These varieties that appear to be *cross-unfruitful with Delicious* are Red Stayman, Richared, Shotwell Delicious, Starking and Winesap. The data concerning the value of Golden Delicious as a pollinizer for the Delicious is inconclusive. In 1928 the variety was unsatisfactory, in 1929, highly cross-fruitful and in 1931 fairly satisfactory only. The Red Winesap appeared doubtful as a good pollenizer for Delicious and the Ortley, and White Winter Pearmain only fairly adequate.

Howlett (1929) found under Ohio conditions that as pollinizers for the Delicious, the Grimes, Jonathan, Golden Delicious and Rome were satisfactory and that the Richared and Starking were valueless. The data from

Washington are in agreement with Howlett, (Ohio Experiment Station) and his data lend weight to the conclusion that the Golden Delicious is a satisfactory pollinizer for the Delicious.

Table 1—The Pollination Response of the Delicious

Pollen Parent	*Year*	*Total flowers pollinated*	*Total Fruit Set*	*Average per cent Fruit Set*
Arkansas	1928	115	25	21.7
Black Ben	1928	67	16	23.9
Blackjon	1931	765	123	16.1
Delicious (selfed)	1926-31	2369	34	1.0
Golden Delicious	1928	156	5	3.2
Golden Delicious	1929	135	32	23.9
Golden Delicious	1931	843	67	7.9
Grimes	1928	183	43	23.5
Jonathan	1926-31	1304	184	14.1
King John	1931	302	47	15.6
King David	1928-29	156	27	17.1
McIntosh	1928-30-31	440	90	20.5
Ortley	1929	122	11	9.0
Red Rome	1928-31	852	100	11.7
Red Stayman	1928	56	0	00.0
Red Winesap	1928-31	154	8	5.2
Richared	1927-29-30-31	840	17	2.0
Rome	1926-31	1484	257	17.3
Spitzenberg	1926-27-28-30	667	113	16.9
Shotwell Delicious	1931	705	5	0.7
Starking	1930-31	789	6	0.1
Winesap	1927-30	359	3	0.8
Winter Banana	1926-31	575	119	20.7
W. Winter Pearmain	1928-31	526	47	8.9
Yellow Newtown	1928-31	871	125	14.4
Normal Count	1926-31	1841	202	11.0

Vincent (1920) and Lantz (1926) obtained a good set from Delicious when pollinated with Jonathan. Keil (1923) obtained satisfactory sets upon Delicious when crossed with Esopus. Whitehouse and Auchter (1927) found the Delicious to be self-sterile and that the Winesap did not give a set of fruit upon the Delicious. Howlett (1927) obtained satisfactory sets on Delicious when pollinated with McIntosh. Einset (1930) obtained good sets of fruit when he pollinated Delicious with Yellow Newtown and Rome and a fair set with McIntosh pollen. Howlett (1927) (1929) and Knowlton (1929) found Grimes to be a good pollinizer for Delicious. Knowlton (1929) found the Golden Delicious was a good pollinizer for the Delicious. This would further indicate that the data in Washington for 1929 was perhaps accurate. Howlett (1929) did not obtain a set upon Delicious with Gallia pollen (a strain of Red Rome.) The data in Washington, however, indicated the Red Rome strain employed was a satisfactory pollinzer for the Delicious.

THE WINESAP

The evidence obtained by investigators is that the Winesap is self-unfruitful. Those varieties which the data in Table 2 indicate are satisfactorily cross-fruitful with the Winesap are Arkansas Black, Black Ben, Delicious, Grimes, Golden Delicious, Jonathan, King David, King John, McIntosh, Red Rome, Rome, Esopus. (Spitzenberg), Winter Banana, White Winter Permain, and Yellow Newtown. Those varieties that appear to cross unfruitful upon Winesap are Ortley, Red Stayman, Shotwell Delicious, and Stayman. The Richard and Starking seem to be adequate as pollinizers for the Winesap.

Einset (1930) obtained no set when Winesap was pollinated with Stayman.

Table 2—The Pollination Response of the Winesap

Pollen Parent	*Year*	*Total flowers pollinated*	*Total Fruit Set*	*Average per cent Fruit Set*
Arkansas Black	1928	100	22	22.0
Black Ben	1928	100	27	27.0
Blackjon	1931	315	32	10.0
Delicious	1926-31	6541	1733	26.5
Grimes	1928	100	17	17.0
Golden Delicious	1928-31	545	108	19.8
Jonathan	1928-30	429	79	20.0
King David	1928	100	26	26.0
Kink John	1931	69	12	17.4
McIntosh	1928-30	430	102	23.7
Ortley	1930	294	3	1.0
Red Rome	1928-30-31	573	74	12.9
Red Stayman	1928	100	0	0.0
Richared	1928-30-31	564	52	9.2
Rome	1930	322	72	22.3
Shotwell Delicious	1931	112	7	6.3
Spitzenberg	1928-31	363	52	14.3
Starking	1930-31	494	47	9.5
Stayman	1928	100	3	3.0
Winesap (selfed)	1926-30	3491	34	1.0
Winter Banana	1928-30	216	49	22.7
White Winter Pearmain	1928-31	542	73	13.47
Yellow Newtown	1928	100	26	26.0
Normal Count	1928-30-31	442	56	9.67

THE RICHARED

The Richared blossoms employed for pollination were on trees about 7 years old and hence the set may have been less than would have been the case on more mature trees.

The Richared (Table 3) is self-unfruitful, and is apparently inter-unfruitful with Blackjon, Delicious, Jonathan, Starking, Shotwell Delicious, and White Winter Pearmain. The Richared seems to be adequately cross-fertilized by King David, McIntosh, Ortley, Rome and Winter Banana. The Golden Delicious, King John and Red Rome, were only partially satisfactory as pollinizers for the Richared. In 1929 the Yellow Newtown gave an excellent set on the Richared, but in 1930 and 1931 the set was unsatisfactory.

Table 3—The Pollination Response of the Richared

Pollen Parent	*Year*	*Total flowers pollinated*	*Total Fruit Set*	*Average per cent Fruit Set*
Blackjon	1931	212	4	1.9
Delicious	1930-31	422	3	0.7
Golden Delicious	1929-31	324	18	5.6
Janathan	1931	216	1	0.7
King David	1927	72	12	17.0
King John	1931	201	9	4.5
McIntosh	1929-31	287	52	18.1
Ortley	1929	72	9	12.5
Richared (selfed)	1927-29-30-31	543	9	1.7
Red Rome	1930-31	401	14	3.5
Rome	1929-31	283	59	20.8
Starking	1930-31	371	4	
Shotwell Delicious	1931	153	1	0.7
White Winter Permain	1931	263	1	0.4
Winter Banana	1928	67	30	45.0
Yellow Newtown	1929	25	16	64.0
Yellow Newtown	1930-31	394	8	2.0
Normal Count	1930-31	1489	99	6.6
Emasculated only and no pollen applied	1931	566	2	0.35

THE STARKING

The blossoms pollinated were on grafts four-years old on trees approximately 15 years old. The data in Table 4 shows the Starking to be self-unfruitful, and to be inter-unfruitful with Delicious and Shotwell Delicious. The data for 1930 also indicate that the Jonathan, Red Rome, Winter Banana and Yellow Newtown are not satisfactory pollinizers for the Starking. Some frost injury was experienced, however, in 1930 and the data are, therefore, not conclusive. Varieties indicated as satisfactory pollinizers for the Starking are Blackjon, Golden Delicious (with exception of 1930 data) and White Winter Pearmain.

Table 4—The Pollination Response of the Starking

Pollen Parent	*Year*	*Total flowers pollinated*	*Total Fruit Set*	*Average per cent Fruit Set*
Blackjon	1931	203	25	12.32
Delicious	1930-31	348	0	0.0
Golden Delicious	1930	166	0	0.0
Golden Delicious	1931	214	32	14.95
Jonathan	1930	166	3	1.81
Red Rome	1930	216	0	0.0
Shotwell Delicious	1931	73	0	0.0
Starking	1930-31	366	0	0.0

Winter Banana	1930	212	3	1.42
White Winter Permain	1931	144	29	20.14
Yellow Newtown	1930	218	0	0.0
Normal Count	1930	1023	342	33.44
Normal Count	1931	362	6	4.23
		1385	348	25.13

THE GOLDEN DELICIOUS

The data in table 5 indicate that the Golden Delicious is self-fruitful and satisfactorily cross-pollinated by Delicious, Jonathan, Starking and Winter Banana.

Workers of the South Carolina Experiment Station have reported that under their conditions the Golden Delicious failed to set fruit when self-pollinated.* The one years data obtained in 1930 in Washington, however, indicated the Golden Delicious was adequately self-fruitful.

* Note by Assistant-Secretary of the Maryland State Horticultural Society. Experiments conducted by the Horticultural Department at the Maryland Station indicate that the Golden Delicious is self unfruitful under Maryland conditions.

Table 5—The Pollination Response of the Golden Delicious

Pollen Parent	*Total flowers pollinated*	*Total Fruit Set*	*Average per cent Fruit Set*
Delicious	187	92	49.20
Golden Delicious (selfed)	189	66	34.97
Jonathan	192	63	32.82
Starking	168	64	34.05
Winter Banana	168	56	33.40
Normal Count	892	157	17.61

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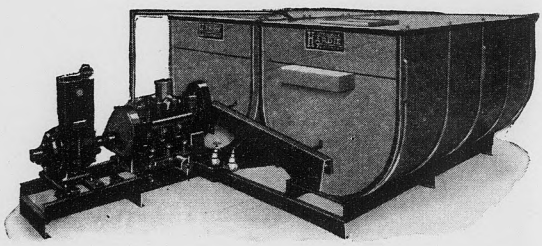

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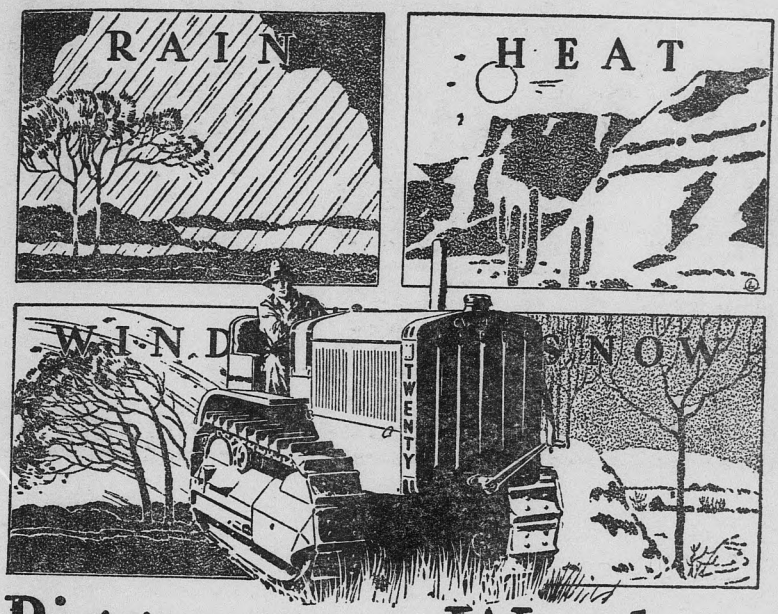

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